MODIS Technical Team Meeting
Thursday, April 19, 2001
3:00 PM

Vince Salomonson chaired the meeting. Present were Bob Murphy, David Herring, Chris Justice, Skip Reber, Dorothy Hall, Eric Vermote, Ed Masuoka, Mike Roberto, Jack Xiong, Bill Barnes, Steve Kempler, and Sol Broder, with Rebecca Lindsey taking the minutes.

1.0 Schedule of Upcoming Events

- Terra Cloud Mask Conference — May 8-9, 2001
  University of Wisconsin-Madison

- Ocean Color Science Meeting — May 22-24, 2001
  San Diego, CA

2.0 Meeting Minutes

2.1 Instrument Update

Roberto reported that the current budget for SBRS to support MCST has been exhausted. Further work is on hold until funding is authorized. Paul Ondrus, Bill Barnes, Jack Xiong, Bob Murphy, and Mike Roberto will meet to discuss further funding. Barnes reported that MODIS has already sent funds to SBRS. Murphy said this is an issue for the future because the money shouldn't be coming from MODIS.

Roberto also reported that SBRS completed characterization of SDSM screen transmittance function as a function of angle of incidence last week. The results of the test of the spare screen were in agreement with theoretical predictions, and SBRS will prepare a memo on the topic and send it out. Roberto indicated that the PFM instrument cold focal planes remain under control at 83 K. The heater power used for temperature control is remaining constant despite the changing beta angle.

Goddard (John McCloskey), SBRS, and TRW have been involved in following up on understanding why the FM1 Telemetry and Command Processor received a reset pulse during ambient temperature spacecraft level testing at TRW. SBRS used the engineering model instrument and showed a 5-volt pulse of 300 microseconds duration could reset the CP. The results were documented in a memo. The investigation will continue to characterize the noise on the input reset line from the spacecraft during switching between nominal and redundant

sides, as well as during other commanding operations. Possible interface changes are under consideration.

Murphy asked about wiring and if that was the cause. Roberto didn't know, but electrical crosstalk is suspected. The investigation will characterize the noise on the reset line, and a determination will be made if changes in the interface can correct the problem if necessary.

Finally, Roberto reported that qualifications of new latches and the space view door failsafe is nearing completion. A decision is expected soon on whether to remove the Nadir Aperture Door failsafe and re-qualify it or leave this failsafe on the instrument and just replace the outer shell.

2.2 GESDAAC/MODAPS/Reprocessing Update

Kempler reported that with respect to the reprocessing set to begin in May, they will be ready to go on May 15, using the leading edge of the data stream. On June 1, they will begin the retrospective processing.

MODAPS is currently processing data from February 16th. What they have decided to do is skip ahead to the current day, i.e. the most current data being produced at the DAAC, in order to be in step with the DAAC and to be able to handle special requests for current data more efficiently (such as a recent request from Yoram Kaufman to obtain granules over a dust storm in Asia). Skipping ahead to the current day will create a gap in the data for data days Feb.16 through about April 15, 2001. With whatever "x" MODAPS has that isn't being used for processing the current stream, they will continue to work on that gap. They expect that they will be able to maintain the forward, current stream, and work off the back log at a rate of .25 data days per day on the existing Origin 2000. After MODAPS software is installed on the new Origin 3000, it will be used to work on the data gap at a rate of two data days per day. Being current with the DAAC increase the amount of data that can be sent to MODAPS by one data day per day since the current data can be sent in addition to the data staged from the tape archives and pushed to MODAPS.

When May 15 arrives, GES DAAC will begin processing data forward as collection 3, the "consistent-year" collection. On June 1, they begin retrospective processing. Between now and then, MODAPS will have been working off the gap between February 16th and April 15th. Whatever day MODAPS is on at that point—for example, say they get to March 28th—that is the data date on which the DAAC will begin its reprocessing stream. After they have reprocessed that segment, they would go back to November 1, 2000, and begin reprocessing those data.

Whatever software is ready and approved by the team on June 1 will become part of the processing for consistent year. Other PGEs will trickle in after that. On June 1, MODAPS will be processing the current day from the GES

DAAC (6/1onward) plus reprocessing data sent by the DAAC as described above.

Kempler reported that they had been concerned about Bruce Guenther's new LUTs, but they are going well, and should be ready by May 15. Finally, he reported that the DAAC has processed through day 89 complete (March29), and they are close to the leading edge of EDOS. They are still turning off production periodically to push data at full "x" to MODAPS.

2.3 MODAPS

Masuoka reported that they are getting ready for their new hardware. It will be on and running by next week, but not ready for full production. The Origin 2000 system is running about 1.3x now, and they think that by the time of reprocessing it will be 1.5 or 2x. The new Origin 3000 is twice as fast. So they are thinking production might be able to be at about 4.5x. However, production of global 250m land hasn't been turned, and the throughput x-rate may change due to the added volumes of 250-m production.

Masuoka also reported that Ghassem Asrar is coming to visit the DAACs, MODAPS, and maybe EDOS on May 11. Masuoka said it would be good to have some posters highlighting MODIS science. Salomonson indicated that we have some posters in press and that perhaps we could present some to him. Masuoka indicated that he had heard Oceans had some new images showing MODIS improvement over SeaWiFS, and those might be good as well. Justice suggested something from the rapid response fire system that is being developed.

2.4 Rapid Response

David Herring gave a brief presentation on the way the Earth Observatory (EO) has been approaching the rapid response mechanism in order to get data that can be used to make near real time images for a variety of media outlets in response to current events. The question is how to get at the data for outreach purposes without impacting science production. Currently they take L1B from DAACs, and they are also looking at developing stronger relationships with the MODIS Direct Broadcast Receiving Stations all over the world. Herring talked about how EO could interact with Direct Broadcast Stations over the globe, as well as Justice's rapid response system that Masuoka and Justice are working on.

Reber asked why, if the EO has the system in place, did NOAA images of the recent floods in the mid-west get used in the paper instead of MODIS. Herring said the problem was two-fold. One, the media aren't trained to think of using us for near-real time stories, and two, the interaction between the EO and the Public Affairs Office isn't optimized for that quick turnaround. Because the PAO is geared toward producing clips for TV primarily, it takes time for them to render the digital image created through the EO's "rapid response" mechanism.

Often by the time they render the images into analog, they are no longer as current. Because the EO has always given PAO the opportunity to use the material first, that often means the EO can't post the digital images when they are most current. Salomonson suggested that he meet with Jan Ruff to discuss how best to use the EO and rapid response images to serve the needs of multiple users.

Herring felt the EO's plans to further expedite its rapid response system would fit in with MODIS's rapid response system being worked on by Masuoka and Justice. The EO works with news media outlets to get tips on what news is hot, so they can generate images quickly for forest service, museums, PAO, etc. Justice indicated that the concern about the NOAA feed is that there are gaps in the data that will hamper the rapid response system. Working with the global network of Direct Broadcast stations would provide a fall back measure for filling in those gaps. Justice said that the plan is to look for external resources and to work with the current staff, and see how things work.

2.5 MCST

Barnes reported they are planning to change the gain on Band 5 on Terra MODIS. They have looked at number of desaturations, and it has gone down. Xiong reported that MCST needs to do a Vdet/Itwk sweep that would cause science data loss over the poles in thee next week or two. MCST wanted to know if anyone had a problem with that. Hall indicated that Ken Anderson would be at the North Pole, and she would have him contact MCST about when that would be.

2.6 General discussion

Salomonson reported that there would be a meeting on April 20, 2001, with Jim Dodge, who is responsible for the recompetition NRA, to give him an idea of what is involved in MODIS data processing, including how the science team interacts with the data support and production systems.

3.0 Action Items

3.1 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.

Status: Open.

3.2 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.

Status: Open.

3.3 Masuoka to give Murphy an update on product releases.

Status: Closed.